AMERICAN RAILROAD JOURNAL,

AND

ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 30 WALL STREET, AT FIVE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, and GEORGE C. SCHAEFFER, } Editors and Proprietors.

SATURDAY, OCTOBER 7, 1837. (Published February 3, 1838.)

VOLUME VI.—No. 40.

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NEW-YORK, FEBRUARY 3, 1838.

We acknowledge the receipt of the following Reports:

Proceedings of the Stockholders of the Louisville, Cincinnati and Charleston Railroad Co., at their Second Meeting held at Flat Rock, N. C., October, 1837.

Report upon the plan of Construction of several of the principal Railroads in the Northern and Middle States, and upon a Railway structure for a new track on the Baltimore and Ohio Railroad, by J. Knight, Chief Engineer, and Ben. H. Latrobe, Engineer of Location and Construction.

[We return thanks for this copy, and would be much obliged by the receipt of another. If the work is not intended for sale, we desire to make public, through our columns, some of the information contained therein; it is highly valuable to the Engineers of this country.]

Report of the Jefferson and New Albany Canal Co., Thos. F. Purcell, Chief Engineer.

☞ In reply to the inquiry of E. C. B. of S. C., in relation to a "communication on the subject of steam-boats," which he sent us in August last, we can only say that we have no recollection of having received it.

The letter covering $10, came duly to hand.

IMPROVED TURN-OUTS.

We acknowledge ourselves indebted to the writer of the following communication, describing the improved *turn-out*, now in use on the Liverpool and Manchester Railroad.

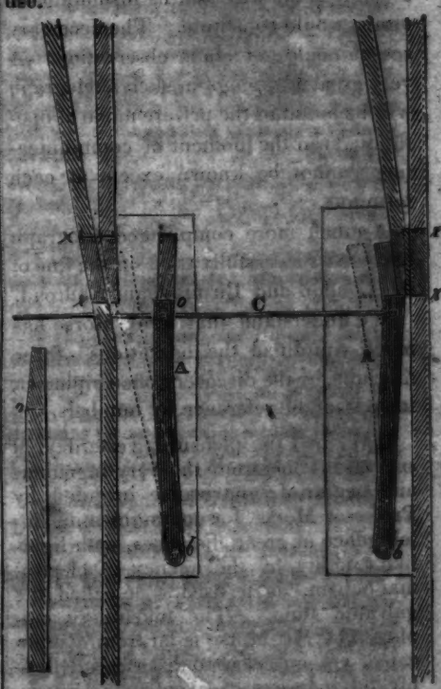
To the Editors of the Railroad Journal:

GENTLEMEN—The frequent occurrence of dangerous accidents on Railways, produced by the trains running off the track, which in most instances is caused either by neglect, or inaccuracy, in the working of the switches in turn-outs, induces me through the medium of your Journal, to suggest to Engineers and Railroad proprietors the adoption of the following plan of working turn-outs, lately introduced on the Liverpool and Manchester Road, by which all possible accidents from this source are avoided, and even the grossest neglect of the attendant, or wilful derangement of the switch, cannot jeopardize the lives of passengers, or the safety of the engines and cars.

The present method of changing the direction of the engine and train from one track to the other, is to have the rails moveable for a distance of about 15 feet, and to make this line of rails serve in common for both tracks. Thus, one track is at all times interrupted, and consequently, the train liable to run off, if by accident or neglect, the switch should not be exactly in the right position.

The accompanying sketch of the new method shows that the lines of rails in the main track, as well as turn-out, are perfectly *uninterrupted*. The change of direction of engine and train from one track to the other, is effected by two guides, AA, moveable upon hinge bolts, *bb*, and connected by the rod C, which passes under the main rail, and is worked by a simple lever, as in the present system. That portion between the letters *xx*, where the rails approach each other within 1½ inches, so as to allow a free passage for the flanges of the wheels, should be made in one casting; the joints of the inner two rails, against which the guides close, should not be less than half an inch wide, and may be made of cast steel.

The guides must be of wrought iron, 2½ inches wide, 4 inches thick, and about 5 feet long. The top of the guides must be level with the top of the rails; but from the point *o*, where they close against the casting, they should taper down in a distance of 9 inches, to 2½ in. thick, leaving the ends of the guides 1¾ inches below the top of the rails—(see section of the guide). The object of this is, that if the train should come down on either track, and the guides by neglect or accident left so as to close it up, then the flanges of the engine and carwheels on one side would gradually mount on this incline, and passing over the guide drop again between it and the main rail, and thus regain the track without in the least endangering the lives of the passengers, or the safety of the engine and cars. The cost of working turn-outs in the manner described, differs but little from those now generally in use.



The advantages of this new method over the old are too palpable to require further comment; and I have no hesitation in saying that it would be a good economy on any Railroad already in operation, to adopt this plan, for one

accident caused by the other, would involve a Company, probably, in more expense, than a change of all the turn-outs would amount to.

C. E. Detmold, Civil Engineer.

ELECTRICAL TELEGRAPH.

Among the Electrical novelties of the day, and they are numerous, the Telegraph of Prof. S. F. B. Morse, of the New-York University, is one that has excited much admiration, from its simplicity and immediate application to use.

We have not ourselves had the pleasure of examining it; we give a description from the Commercial Advertiser.

"The only difficulties consist in the perfect insulating of the wire in situations where it will be exposed to the contact of water. The numerous waterproof inventions of the day can certainly furnish a cheap and perfect process for insulation. We do not attach much weight to the objection advanced by some, that through design the wire may be divided at a time when most needed, and in such a manner as not to leave indications at what point, in a line of many miles, this may have been done. It would require but very little contrivance to place it entirely out of the power of one unacquainted with the location, to determine the exact line of the position of so small a chain as the wire and its insulating covering would constitute. The necessary search could not elude observation. A very great advantage in such a telegraph will be found in the private mode of operation, even the moment of communicating cannot be known except at each terminus.

A much more complicated telegraph has been successfully tried on the line of the London and Birmingham Railroad.

We understand that Prof. Morse has much simplified the operations of the machine, by the discovery of an alphabet, instead of the reference by numbers.

"We had the pleasure, yesterday, of seeing in operation the very ingenious and beautiful contrivance invented by Professor Morse, for communicating intelligence at great distances, with light-like rapidity, by the agency of electro-magnetism, as it used to be called, the galvanic fluid. The machinery employed by Mr. Morse is far from complicated, yet not easy to describe intelligibly. It consists of a galvanic battery, any required length of coated wire, a font of type, two dictionaries, a small apparatus at one end of the line for breaking and renewing the galvanic chains of communication, regulated by the type set up, and at the other end of the line another set of apparatus, by which a brass pen is made to strike upon a sheet of paper, rolled round a small revolving cylinder—a stroke of the pen being given at every renewal of the galvanic communication. The length of wire through which the signals were conveyed, was ten miles; this wire being wound for convenience, around some three or four large wooden rollers. In attempting to give our readers some idea of this admirably ingenious machinery, we will begin at what printers very naturally consider the beginning—to wit, the types.

"These are thin pieces of metal, about two-thirds or three-quarters of an inch in width, one of the longer edges being notched to the depth of about half an inch—the number of notches being from one to nine, representing the nine numerals; the cypher is represented by a long notch, or indentation of about three-quarters of an inch. With these ten types, it is evident, therefore, that any given amount in figures may be represented.

"Next come the gallies, which are pieces of wood about an inch square and 80 inches long, having cogs on the under-side, and on the upper a slit, extending throughout the length, and deep enough to receive half the width of the types above described, which are sent into the slit in line, as required to represent the numbers.

Every word in the language is represented by a number, the whole dictionary containing some 50,000. The two dictionaries are of course precisely similar, one being for use at either end of the telegraphic line. Every word has its number placed before it, so that the number for the word or the word for the number may be found with ease and expedition.

The apparatus for breaking and renewing the galvanic communication is simple and efficient. It consists merely of a lever, about three feet long, moving on a pivot at one end, and having at the other a pair of copper points, which fall into as many small cups containing quicksilver, and are raised again, according as the end of the lever is depressed or deviated. The cups communicate by wires with the galvanic battery, and to the lever is attached the end of the ten mile wire. Connected with the lever is a small winch, working a toothed wheel, which plays in the cogs of the galley, so as to make it pass along, under the lever.

Upon the under side of the lever, not far from the pivot on which it moves up or down, is a brass tooth, fitting the notches in the types. So that the operation is, when the winch is turned and the galley moves along under the lever, to make this rise and fall alternately, as the tooth falls into the notches in succession. Thus the communication is broken and renewed in a succession exactly corresponding with the notches of the types, which notches in their order represent a given sum in figures. This is the contrivance at one end of the line—the end from which intelligence is to be communicated.

The apparatus at the other end is somewhat more complex, and we shall not attempt to describe it farther than by saying, that its object is, first, to attract attention by striking a bell, acted upon by the galvanic stroke or shock from the other end, through the ten mile wire next to set a motion, the cylinder around which the paper is wound, and lastly, to make the brass pen strike this paper at every renewal of the communication, and rise from it at every break. It is obvious, therefore, that the succession of dots on the paper, the cylinder all the while slowly revolving, will correspond exactly with the notches in the types, as the galley passes under and acts upon the lever at the other end. Thus, suppose notches to represent the numbers 22, 47, 121 and 236. The dots on the paper will stand thus: oo oo oooo ooooooo o oo o oo ooo ooooo the long spaces indicating that the number is complete, and that a new one is to be commenced. A cypher is indicated by a dash, thus;———; the communication remaining unbroken while the long indention in the edge of the types passes under the tooth of the lever.

Such is the contrivances—if our readers can understand the description—by which Professor Morse proposes to communicate any required information, between points however distant, in a space of time much less than must be necessary by any other mode ever devised, or suggested. We have not the requisite science to offer an opinion whether it is or not liable to objection; but so far as the experiments we saw may be taken in evidence, the result is perfectly satisfactory and convincing. A communication of our own suggesting, and only known to Mr. Morse by the numbers representing the words, was communicated in eight minutes from the time at which he commenced setting the type; and this too, under all the disadvantages arising from want of practice, and from the presence of a curious and eager throng of spectators.

That the galvanic stroke was communicated through the whole ten miles of wire, was abundantly demonstrated—and we understood from gentlemen present, more capable than ourselves of appreciating the evidence; and we also understood from them, that it would have communicated through a hundred miles with the same rapidity and certainty. The rapidity, by the way, is that of light; the keenest eye can perceive no interval between the fall of the lever at one end, and that of the brass pen at the other.

It is proper to say that the dictionaries used are the common octavos of Walker, and contain multitudes of words which would never be required. Professor

Morse said that he entertained no doubt of being able to reduce the words to 30,000, or perhaps to 20,000. Our own opinion is that a much smaller number could be made sufficient.

We understand that Professor Morse goes to Washington immediately with his apparatus, where it will doubtless attract wondering attention.

NOTE.—A more *obviously* satisfactory experiment might be made perhaps, by stretching out the line of wire between two points as distant as convenience would permit; as for instance, between the Battery and 40th street—which might be done, we should think, by stations on the tops of houses.

RAIL ROADS IN CAROLINA.

SIR—On all accounts, the opening of roads South is of the first importance in the Northern Cities. So important, that I trust you will insert the following observations, as written by a Carolinian, who has recently been on the spot, and thinks himself qualified to offer a few hints as to the proper method of filling up the gap between Waynesboro', N. C., and Charleston, S. C., and thus completing the road from the North. He believes his calculations to be *generally* correct, but if not *exactly* right, the errors can be easily rectified. X. Y. Z.

A New York Journal having stated that the Baltimorians, by means of the Railroad to Philadelphia, are anticipating the express mail; and, also that the Washington and Roanoke Railroad, is in a state of rapid progress, it is to be presumed that a continuance of the Railroad from Waynesboro,' N. C, to Charleston, would operate in the same manner; therefore, the object of this paper is to show that such a line must be a source of profit to the proprietors; and, if the Government would advance two-fifths, or any proportion to be hereafter determined, incalculable benefit will be derived by the people of the United States, in the means it would afford of carrying all its crops, mails, &c, &c., free of any further charge.

In a calculation of the profits of the Louisville, &c., Railroad, based on the results of the Charleston and Hamburg road, General Hayne makes it for 620 miles, 177,142 passengers, paying $669,825. In a short time, he thinks it will be "doubled." The freight he estimates at $1,000,000. Half of this would be receivable on a road, commencing at Summerville, 24 miles from Charleston, and proceeding across the Santee to Waynesboro, N. C., via ———, below Manchester, Summerville, Darlington and Fayetteville—or, in length, 200 miles.

The Cost.

260 miles at $10,000 per mile	$2,000,000
Locomotive power $327,000, say	400,000
	$3,000,000

Annual Expenses.

200 miles at $7,00 per mile	182,000
Passengers	462,000
Leaves a balance of	$280,000

Of the $5,00,000 for freight, no notice is taken. The calculation is confined to passengers. On the subject of the Summerville and Waynesboro road, let us takes the receipts of the 135 miles of the Charleston road, over which, in 1836, 39,216 passengers passed, paying $129,982,34 —— the freight amounting to $129,633,84—they making a total of $269,016,18. The cotton that year, would produce $35,000—thus leaving $234,016,18, for 135 miles of road. The Summerville and Waynesboro road is 200 miles. Increasing $234,016,18 to $240,000, and allowing for the difference of distance, the receipts of the new road would be $462,000.

But the importance of this subject, exemplified as it is by the actual results of the Charleston road, has led us into an investigation of the relative value of domestic and foreign communication—the general idea having been that the benefit derived from that road, proceeded principally from the passage *through*, rather than the communication *within* the state; therefore, on a reference to the otherwise *variously* stated and gloriously confused topsy turvy official documents of the Company, I have been induced to ask

Who Paid the Passage Money?

1836.

	Passengers		Per Capitem
July	2857	$7252 64	$2 85
August	2380	7092 32	2 85
September	1891	6678 04	3 53
October	2782	16 577 51	3 76
November	3294	10 537 57	3 18
December	4007	10 441 18	2 61
	17 205	$52 579 26	$18 47
Month av.	2867	7 763 21	3 07

1837.

January	2 916	$8 537 74	$2 93
February	3 786	12 383 93	2 61
March	4 695	16 614 25	3 32
April	4009	12 385 95	3 08
May	4009	12 977 69	3 23
June	3092	9 300 56	3 00
	22 506	$71 202 12	$18 23
Month av.	3 757	11 867 02	3 04

Conjectural Analysis.

From Augusta 335 m	5626 a	$675	$37 976
Branchville 62 m	5626 a	300	16 878
Inabinets 30 m			
Fm Charleston 11	254	1 50	16 381
	22 506		$71 235
First six months	22 506 in 1837		71 202

The latter is but conjectural, and as the *actual* report will be highly satisfactory, it is to be hoped that as the Company is at market and should make a fair display of its situation, it will let the public have a correct detail of the lands whence its receipts have arisen. If it turns out that the mass is received from *within* instead of *without* the state, it will prove very encouraging to all Railroads, and especially those in S. C.

I will look a little farther into the subject.

In 1836, 39,216 passengers paid $129,982,34 and the freight paid $139,033,84. Total 269,016,18.

In 1st half of 1837, there were 9,248 passengers *up* against 7500 in the 2nd half of 1836, showing an increase of 1748.

In 1st half of 1837, there were 13,258 passengers *down* against 9705 in the 2nd half of 1836, showing an increase of 3553.

In 1st half of 1837, there were 22,506 passengers *up and down* against 17,205 in the 2nd half of 1836, showing an increase of 5,301.

Monies received for Passengers.

First half of 1837	$71 202 12
Last half of 1836	52 570 26
Showing an increase in six months of	$18 622 86

Monies received for Freight.

In 2nd half of 1836	*up*	$49 428 96
In 1st half of 1837		35 038 02
	Diminution	$14 390 94
In 2nd half of 1836	*down*	19 410 75
In 1st half of 1837		10 543 24
	Diminution	$68 839 71
	Up and down	$68 839 71
In 1st half of 1837		45 581 26
Showing a *Diminution* in 6 months of		$23 258 85

If to the *decrease* of freight, we oppose the *increase* of passage money, there will be left a balance of $4,635 59; but, if the increase next year in passage money be similar to that of the last, there will still be an augmentation in the increase of $14,000, or enough to pay half the interest of the Company's debt—nearly $500,000.

I see also a notice "of the Cincinnati and Charleston Railroad having offered to purchase the shares of the Charleston and Hamburg road, &c., &c." This is an error. Like the road (to the west,) it is as yet but *a subject of conversation.* But on any calculation, the purchase appears to be out of the question.

Charges attending the Purchase of the Charleston and Hamburg Road.

1. Cost of *doubling* 62 miles road from Branchville to the City $4000 pr. m.	$250 000
62 miles from Columbia to Branchville $10,000 pr. m.	620 000
34 miles from Columbia to Camden $10,000 pr. m.	340 000
Of 12,000 shares of the old Company a a $125 p. s.	1 500 000
Crossing the Cangaree	42 710 00

Estimate of a New Road.

2. Cost of 110 miles from Charleston, *via.* Santee and Rockland Fall to Columbia, Erie, $10,000 pr. m.	$1 100 000
Of making 34 miles of road from ———, below Manchester 10	

Camden at 10,000 pr. m.	840 000
	$1 440 000
Crossing Wateree Santee	
Leaving a difference between No. 18. No 29	1 270 000

If the Congaree is passed at Columbia, it is at the expense of the Western Company, and for the benefit of the Bridge Company. The mere ordinary travel of the country will first pay a small, and eventually a good interest on the structures upon the Santee and Wateree.

But let us look to the

Annual Expenses.

No. 1. 62 miles a $1106 per. m.	$68 575 00
96 miles 700 per m.	67 200 00
	$135 772 00
No. 2. 144 miles a $700 per m.	$100 800
Saving 34 972	135 777 09

Total Saved.

In 20 years $34,972	$699 440
Difference of purchase and Construction	1 270 000
	$1 969 440
197 miles of road, a $10,000 per. mile	1 970 000
Actual expenses July to December, 1836	125 646 63
January to June 1837	74 700 12
	$200 346 75
Thus for 135 miles, making an annual charge per mile of	1 484 85
And at the same time the Engineer only calculated it	1 2337 00
The Anti-Peedlee road	1 132 00
The Savannah and Macon	700 00
The Metropolitan	600 00

SEMI-ANNUAL REPORT OF THE DIRECTION OF THE SOUTH CAROLINA CANAL AND RAILROAD COMPANY.

To the Stockholders of the South Carolina Canal and Rail Road Company.

July 10, 1837.

The statement of the affairs of the Company herewith presented, show the income of the last half-year, ending 30th June, 1837, to be $122,077 52

From which the current expenses deducted,	74,700 12
There remains	$47,347 40
From this amount a dividend is declared of three dollars per share on 12,000 shares, is	36,000 00
Leaving a balance unappropriated of	$11,377 40

to be carried to the ensuing half-year's accounts.

The *debts* of the Company will necessarily be increased until October, when the remaining instalments of the new stock, amounting to six hundred and forty thousand dollars, may be called in —eighty thousand dollars per month— with which all the debts of the Company may be liquidated, (except the State loan of one hundred thousand dollars, not payable before the year 1847) and a sufficient capital remain to finish the improvements now in progress. A liberal course has been pursued by the Banks during the present scarcity of money. A little further indulgence on their part will carry the Company forward to its own resources.

The *Road* has gradually improved for the last year—a large portion of the wood work has been renewed. This work is going on, and by the time the embankment is made, and the new iron placed upon the road, the whole surface will be as good as new. Accidents are comparatively harmless where the road is thus improved, and their recurrence is decreased in proportion to the extension of these works.

The *Embankment* is now all under contract, except a few small places not exceeding two miles, to be done by the road hands—the whole to be finished by the month of October, 1838. Many of the worst places are now nearly completed, viz. 9 Mile Bottom, 4 Hole Swamp, Edisto River Swamp, &c. About 100 miles of the road is surface construction —less than 40 miles remain to be embanked.

The *new Iron* is now extended over about 54 miles of the road—441 tons have just arrived—and 1000 tons more is finished and ready for shipment, by last advices from London. This when received will complete nearly 40 miles more, and before placed upon the road it is likely the balance to complete the whole line, will be contracted for and coming forward. The first contract of 2500 tons was made at £11 10s; the second of 1000 tons at £10; and it is reasonable to expect a further decline before it is necessary to contract for the balance.

The *old Iron*, when replaced by new, may be sold, and would no doubt bring 120 to $130,000.

Turnouts have been and are to be placed between all the stations more than seven miles apart; six of which have been completed in the last six months, and six more are about to be constructed, which will increase the whole number to thirty, making the average distance between them about 4½ miles. New tracks and sliding sections have been made at several of the stations to accommodate an increased business. Fences and gates have been put up, the more effectually to secure the property at principal stations.

Houses have been purchased and built at several of the principal stations, in all ten, (and others to be built soon) to be occupied by the resident carpenters. These will afford a shelter to passengers, if accidentally delayed in their vicinity.

The *Machinery* of every kind has been increased, and will continue to be increased, till an adequate supply is procured. Five new engines have been received since January last; two more are in progress, and four more are ordered, all to be completed early in the present season: and three which had been laid aside, requiring large and expensive repairs, are given out, to be completed as soon as possible, by competent machinists, instead of building new ones, believing they can be made as good as new. These, with those now on the road, will swell the number to twenty-seven Engines, besides several that have been condemned, parts of which will answer for repairing others. If one half of this power can be kept constantly in running order, more can be done in a given time than ever has been heretofore; and it is hoped will in some measure meet the expectation of the stockholders, and the demands of the public.

There is now a new class of cars building on eight wheels, and it is expected by October to have twenty or more freight cars, four passenger cars, and four servant, mail and baggage cars, all on eight wheels, besides keeping in repair those on four wheels—say 250 freight, 16 passenger and 4 baggage cars. The eight-wheeled cars, of which there are about 18 ready for service, (a part to be mounted as soon as wheels arrive) carry more than double the weight than can be carried on those on four wheels, and with more ease to the cars, the load and the road. Those appropriated to the passengers add much to their comfort, being fitted up at a considerable expense, costing about two thousand dollars each.

The carpenters are about equally divided in repairing old cars on four wheels, and building new ones on eight wheels.

The engines and cars all suffer much less in going over the road improved by embankment and new iron, and when these improvements are completed, it is believed that double the amount of running machinery may be kept in order by the present force in the shops.

The same saving of labour is calculated upon in keeping the road in repair. A carpenter's gang having in charge six miles, is extended over twelve miles when thus finished off.

The *landed property* of the Company has continued to increase in value, particularly the wood lands. Those which cost 37½ to 50 cents per acre a few years since, would now sell for $1 to $5 per acre; and in places where villages are located, $100 to $500 per acre. The Company have about ten thousand acres acquired by purchase, and over three thousand acres by locating vacant lands granted by the State. In this business there is a competent surveyor constantly employed. These possessions have carried the necessities of the Company for fuel and timber beyond the control of those who would otherwise take advantage of the continual demand for these articles, and has kept the prices down to a lower rate than was at first expected—the general prices of timber being 4 cents a lineal foot, and wood $1.50 per cord.

To give some idea of the advantages derived by those not immediately connected with the Company by the passage of the road through so great an extent of pine barren, a moderate estimate has been made of the additional value of these lands since the road was located, and it has been found that the advance within one mile of the road, and beyond the influence of the towns at either end, not

including any within 15 miles of either extremity, has been equal to the cost of the original construction of the whole road.

The constant supply of timber for repairs, and wood for consumption, gives employment to hundreds of inhabitants on the line—these and those with their families engaged about the road, in all the departments, would increase the number to *thousands* who have their support from this institution. The knowledge of this fact should enlist the good feelings of the community towards the Company, and must be viewed by the stockholders as not the least interesting feature in the enterprise.

It will be received with pleasure by all having a feeling for the moral condition of society, to learn that great improvement in this respect has been observed in all the varied departments of this extensive establishment, (although some few exceptions.) The general character is maintained only by the claim each can lay to a moral course, a correct deportment.

The Directors of the Louisville, Cincinnati, and Charleston Railroad Company residing in Charleston, have asked and had a conference with a committee of the Board of this Company on the subject of connecting the two roads. A report on this subject is annexed, and at the disposal of the Company. The plan of uniting the two, by the purchase, by that Company, of the stock of this, adds to the magnificence of the scheme of this gigantic enterprise, and gives proof on the part of the Directors of the Louisville, Cincinnati and Charleston Railroad Company, of their determination to place this grand undertaking beyond the possibility of failure. Possessed of this road, about half their line is finished to the mountains, and then with the capital subscribed in this State, will carry them to its extreme boundary.

The interest of the stockholders of this Company in this matter is another subject, to which each has a right to look and act for himself individually.

Respectfully submitted by

THUSTRAM TUPPER, President.

July 10, 1837.

(To be continued.)

To the Editor of the Baltimore Gazette.

TRANSACTIONS OF THE MARYLAND ACADEMY OF SCIENCE AND LITERATURE, vol. I. pp. 190.

This volume has just left the press of J. D. Toy, of this city, and I presume has not yet been extensively circulated, and as it is really a phenomenon in our literary horizon, it seems to demand particular attention. It will, doubtless, appear extraordinary to foreigners, when they are informed that this is the first volume of its transactions that any scientific association has ever published in Baltimore, whilst the societies of other cities of our country have for many years been favoring the community with the results of their learned labors. This book, then, whilst it reflects great honor on the Academy, is by no means creditable to the Scientific character of the city, for being too late in its appearance, and for having too few collaborators to contribute to its pages. But it is never too late to begin, and accordingly we congratulate the Academy on its publication, and hope that it may hereafter be able to issue an annual of its transactions, and thus in some measure, redeem the depreciated Scientific reputation of our city.

The volume contains thirteen articles, each of which deserves special mention.

I. Biographical notice of L. H. Girardin, L. L. D. First President of the Academy, &c. by J. T. D.

This is an interesting paper, and shows that the accomplished writer possesses talent not only for describing the usually dry details of rock formations and metallic ores, with Scientific accuracy, but also for adorning a purely literary subject with the graces of an elegant diction and a classical taste. We are indebted to this gentleman for rescuing from oblivion many interesting facts in the life of M. Girardin, and it well became him, who is the successor of the subject of his memoir in the Presidency of the Academy, to accomplish the pleasing task.

II. Outlines in the Physical Geography of Maryland, embracing its prominent Geological features, by J. T. Ducatel, State Geologist, &c.

An article exhibiting extensive investigation and indefatigable energy in the pursuit of his favorite studies, and at the same time displaying his high qualification for the responsible trust confided to him by the Legislature. It shows the resources of the State in almost every department of nature, and communicates much valuable information on a subject heretofore little understood.

III. Catalogue of Phænogemous Plants and Ferns, growing in the vicinity of Baltimore, by W. E. A. Aikin, M. D.

This does not profess to be complete, but shows that the author is assiduous in his attentions to Flora, and well qualified for the arduous work he has undertaken.

IV. A description of the Frostburg Coal Formation of Alleghany County, with an account of its Geological position, by Philip T. Tyson, accompanied with a map of the District.

There we discover *deep* research in more than one sense. Mr. T. has gone to the very *bottom* of his subject, and brought up an abundance of coal. It is a subject about which a man might grow *warm*, for his District seems to be particularly *coaled*. The speculators in lands will be obliged to him for his investigations.

V. Descriptive Catalogue of the Minerals of Maryland, by P. T. Tyson.

The Mineral resources of the State are here pointed out in a very satisfactory manner. The tourist can now ascertain the locality of the object of his search, and he will find his labors vastly facilitated by a perusal of this learned article.

VII. The detection of Arsenic in Medico Legal Investigations, by Wm. R. Fisher.

Any person who desires to see a difficult subject well treated, must read this paper. It abundantly justifies the high reputation which the writer bears as a profound Analytical Chemist.

VIII. The Latitude of Annapolis, by H. Humphreys, D. D.—President of St. John's College.

IX. Report of the Meteorological Committee, with tables of observations made at the Academy.

X. Directions for Preparing Specimens of Natural History.

XI. On the Metallic Coating for Electric Rubbers, by W. R. Fisher.

A short, but good article, exhibiting an improved plan, with minute directions for the use of the article recommended.

XII. Extracts from the proceedings of the Academy.

XIII. Donations to the Library.

This institution, which is really an ornament to the city, has for several years been noiselessly pursuing its way, and the only regret is, that more persons are not found to take an interest in its prosperity. It affords uncommon advantages for the attainment of scientific knowledge. It has an excellent and constantly growing library, an extensive and increasing cabinet, comfortable rooms, and other attractions of no ordinary character. And yet, I have reason to know, there are very few who take an active interest in the institution. There seems to be a want of taste, of intellectual cultivation, of literary, or scientific ambition in our city, which renders it exceedingly difficult to sustain such societies as the Maryland Academy professes to be. There are doubtless many persons who have scientific books, or objects of Natural History of no use or interest to them, which if deposited in the rooms of the Academy would contribute materially to the promotion of science, and there are many who by joining such an Association would be vastly benefited themselves.

BALTIMORIENSIS.

CLEVELAND AND PITTSBURG RAIL-ROAD.

The Cleveland Intelligencer of the 22d inst. says:—Mr. Foot presented the petion of the citizens of this place on the 16th, praying the passage of a law authorising the city to borrow a sum of money to be applied to the construction of Cleveland and Pittsburg rail road. He reported, on the same day, a bill, which was read the first time, authorising a loan of $200,000. On the day following it was considered and ordered to be engrossed for its third reading and final passage on the 18th.

AUTOMATON VIOLINIST.

Galignani's Messenger, published at Paris, furnishes the following interesting account of a new musical wonder, in the shape of Monsieur Mareppe's automaton violin player, which was not long since exhibited before the Royal Conservatory at Paris—and caused much admiration.

"On entering the saloon, I saw a well dressed handsome figure of a man, apparently between 40 and 50, standing with a violin in his hand, as if contemplating a piece of music, which lay on a desk before him; and had I not gone to see an automaton, I should have believed the object before me to have been endowed with life and reason, so perfectly natural and easy were the attitudes and expression of countenance of the figure. I had but little time for observation before the orchestra was filled with musicians, and on the leader taking his seat, the figure instantly raised itself erect, bowed with much elegance two or three times, and then turning to the leader nodded, as if to say he was ready, and placed his violin to his shoulder. At the given signal he raised his bow, and applying it to the instrument, produced a la Paganinni, one of the most thrilling and extraordinary flourishes I ever heard, in which scarcely a semi-tone within the compass of the instrument was omitted, and this executed with a degree of rapidity and clearness perfectly astonishing. The orchestra then played a short symphony, in which the automaton occasionally joined in beautiful style; he then played a most brilliant fantasia in E. natural with accompaniments, including a movement allegro mollo on the fourth string solo, which was perfectly indescribable. The tones produced were like any thing but a violin, the expression beyond conception. I felt as if lifted from my seat, and burst into tears, in which predicament I saw most persons in the room. Suddenly he struck into a cadenza, in which the harmonics double and single, arpeggios on the four strings, and saltos, for which Paganini was so justly celebrated, were introduced with the greatest effect; after a close shake of eight bars duration, commenced the coda, a prentissina movement played in three parts throughout.

This part of the performance was perfectly magical. I have heard the great Italian, I have heard the still greater Norwegian, I have heard the best of music, but I have never heard such sounds as then saluted my ear. It commenced p p p, rising by a gradual crescendo to a pitch almost beyond belief; and then by a gradual motendo and calendo died away, leaving the audience absolutely enchanted. Monsieur Mareppe, who is a player of no mean order, then came forward amidst the most deafening acclamations, and stated that emulated by the example of Vaucaoson's flute player, he had conceived the project of constructing this figure, which had cost him many years of study and labor before he could bring it to completion. He then showed the company the interior of the figure, which was completely filled with small cranks, by which the motions are given to the several parts of the automaton at the will of the conductor, who has the machine so perfectly under control, that Mons. Mareppe proposes that the automaton shall perform any piece of music that shall be laid before him within a fortnight. He also showed that to a certain extent the figure was self acting, as on winding up a string, several of the most beautiful airs were played, among which were "Nel cor piu," "Partant pour la Syrie," "Weber's last Waltz," and "La ci d'arem la mana," all with brilliant embellishments. But the chef d'ouvre is the manner in which the figure is made to obey the direction of the conductor, whereby it is endowed with a sort of semi-reason.

HANCOCK'S PATENT CAOUTCHOUC BOOKBINDING.

While numerous very important improvements have recently taken place in every other department of the mechanics of book making, that part of binding, which consists of attaching the leaves together, has hitherto remained stationary, if indeed it has not retrograded. That this want of progress in the march of improvement, is not to be ascribed to any perfection in the art as usually practised in the present day, will readily be admitted by every one who is familiar with its details, who has a library, reads a book, or is in the practice of making entries in ledgers or other account books. Mr. Hancock, in his patent process of binding books with caoutchouc, or India rubber, (an article which has made such rapid strides in usefulness within these few years,) is the first that has effected any improvement in the operation in question; and that improvement is a most important one. The qualities of caoutchouc, its elasticity, its adhesiveness, and its being impervious to the ravages of damp or insects render it an article admirably adapted for the purpose to which it has in this instance been applied; and we think there is little doubt, but that it will in a short time totally supersede the use of stitching, paste and glue.

Mr. Hancock's invention consists in the binding of the leaves of books together by a solution of caoutchouc, or India rubber, by various methods, the books being composed of either single leaves, or sheets of any number of folds; dispensing altogether with the operations either of stitching, sewing, or sawing-in, and of the use of paste or glue in the backs. Instead of the leaves only being bound together by stitches at two or three points, the caoutchouc takes hold of the whole length of the leaf, in some of the varieties of Mr. Hancock's patented methods, and of a greater portion of it in others. The caoutchouc may also be used in conjunction with stitching, a back, however formed in this way, although of course stronger than with the caoutchouc alone, will not open quite so freely.

The advantages resulting from the adoption of Mr. Hancock's patent caoutchouc bookbinding are numerous;—the following are stated by the patentee, to be amongst the most obvious. As regards books for the library—bound in the patented manner, they will open with much greater facility, and when opened lie perfectly flat, or more nearly so than books bound in the ordinary way; thus preventing all strain on the backs, as well as obviating the necessity of keeping the leaves apart by force while reading, either with the hand, a weight, or otherwise.

In many expensive public and private libraries, the ravages of the insect produced in the paste, and by damp, have been most troublesome and destructive. Caoutchouc is impervious to both these evils. As regards collections of costly engravings, particularly when of large dimensions, and atlases, to these, the caoutchouc binding is particularly applicable, each leaf being attached with great tenacity. A large map, or chart, or even an engraving, may be doubled, and bound into a book half its size, and the fold at the back of the book, when open, be scarcely perceptible. For music books, the leaves when bound with caoutchouc, will not fly back after the V. S. operation, as they now very frequently do to the interruption of the performer, and often to the marring of a fine passage of music. Manuscripts and collections of letters, where, in the writing of them no margin is left at the back by which they can be stitched, may be bound without the least encroachment upon the writing. And, more particularly as regards ledgers and other account books—every one having any thing to do with book-keeping must have experienced the inconvenience of writing in a day book or ledger, towards the inner parts of the leaves especially, when the back, as is usually the case with such books, is of considerable thickness. The impossibility of obtaining a flat surface with ledgers, &c. bound in the ordinary way, not only retards the operation of writing, but renders it extremely tiresome, besides producing blots and stains from the difficulty of applying the pen to the paper at a proper angle; in many cases also a portion of the breadth of the sheet of paper being wasted. Mr. Hancock's patent method of binding, he states, produces such an elasticity in every part of the back, that it is eqnally convenient and easy to write, whether the book contain fifty or five hundred leaves. That these advantages are duly appreciated, may be learned from the fact, of the approval of the invention by all the great mercantile establishments to which it has been introduced, and by the first account book makers in the trade.—*London Mechanics' Magazine.*

LOCOMOTIVES FOR AMERICA.

We were highly gratified at witnessing, in the course of the week, a trial of the locomotive engines manufactured by Messrs. Braithwaite, Milner, and Company. The workmanship of the engines is of a first rate character. We are glad to know that the late commercial difficulties, which put so serious a check upon the enterprise of our transatlantic brethren, have so far been overcome that confidence is restored, and our railway manufactures for the American market are again in active operation.—*Railway Times.*

LITERATURE IN TURKEY.

The Turkish Penny Magazine, whose appearance we noticed some time ago, is a reprint of our own Penny Magizine, of which the printing and press work are executed at the expense of the Grand Seignor. It is expected soon to equal in circulation the Turkish newspaper which has been established for some time. This now amounts to nearly five thousand, and is expected to be quadrupled as soon as *the new post office* arrangements are completed throughout the empire.—*Ib.*

RENDERING THATCH INCOMBUSTIBLE.

A. M. G. Barentin of Leipsic, lately invented a method of preparing thatched roofs in such a manner as not to be liable to danger from fire. The Saxon government has had M. Barentin's thatch tried, and has approved of it so much as to order it to be generally made use of. (*Scotsman*, Sept. 20, 1837.) Alum would have some effect, both in preserving thatch, and in rendering it incombustible. We know an instance of a gentleman Kyanising the thatch to be used on an ornamental cottage roof, and we hope to be able in a few years to state the result. In the mean time we should be glad to learn if any of our readers know the German secret; and whether any have tried Kyanising with thatch, and what has been the expense per superficial yard of thatched roof, or per truss or load of thatch.—*Architectural Magazine.*

MEDITERRANEAN STEAMERS.

A Russian steamer leaves Constantinople for Odessa, on the 20th of each month. Charge 22 dollars. This route, and thence by way of Hamburgh, is the most expeditious and economical way of reaching England.

For the conveyance of travellers going to Persia, an English steamer has been for some time running from Constantinople to Trebizond, at the beginning and middle of each month. The distance is 530 miles, and the fare 30 dollars. An Austrian steamer, however, having been built and placed upon this station in May, 1837, the passage will now be probably made once a week, and at a reduced charge.

A steamboat (the Maria Dorothea,) leaves Constantinople for Smyrna every Monday at 5 o'clock, and makes the voyage in thirty-six hours. An English steamer, the Crescent, proceeds on the same voyage in thirty hours. The charge for a passage in either boat is 13 dollars, including provisions. To visit the plains of Troy and the ruins of Assos, the traveller should take his place in the Maria Dorothea only to Mytilene, in the Dardanelles, where he will be landed on the morning of the day after leaving Constantinople; and having explored these classic spots, he may, on the following morning, take the Crescent steamer, which will have arrived in the Dardanelles.

The Levant steamer, which has hitherto run between Smyrna and Athens twice a week, making the voyage in about forty-eight hours, at a charge of 20 dollars for the passage, has been discontinued for some months, in consequence of a dispute with the Greek Government; but there is no doubt that several other steamers are by this time on the station.

The Ionian steamers leave Corfu for Zante on the 8th and 26th of each month, and return on the 12th and 29th. The charge is 2*l.*, the voyage being made in about fourteen hours. The steamers for Ancona leave on the 16th, and arrive there on the 18th. They leave Ancona, on their return, on the 21st or 22d. Charge 6*l.*

The English steamer leaves Corfu on the 29th, touches at Patras on the 31st, to take her mail, and thence proceeds to Malta, touching at Zante, and on to Falmouth; making the voyage of 1900 miles in about twenty days.

Those who wish to proceed to Egypt or Syria, take the English steamer at Zante, on the 31st of the month. It reaches Malta in three days; the charge being 8*l.* Another steamer leaves Malta on the 20th, and arrives at Alexandria in six days; the charge being 12*l.*; and thence it immediately proceeds to Beyroot, in Syria, which it reaches in two days. The charge is 6*l.*—*Guide along the Danube.*

CHILDREN.

A bill has been introduced into the Legislature of Pennsylvania, providing for the education of children, which is very important to factory owners, and is alike interesting to the poor and the rich. The following is an abstract of the bill:

"That no child of a less age than ten years shall be employed in a factory.

That no child of a less age than sixteen years shall be allowed to labour more than ten hours per day.

That all children employed in factories, not sufficiently well educated to be able to read, write, and keep an account, shall be sent to school at least three months in each and every year, while they are so employed, or until they are so far advanced in the rudiments of education as above mentioned."

Penalties are imposed on parents, guardians, or other persons, having charge of children, who neglect or refuse to comply with the above requisitions.

Penalties are also imposed on employers, for employing or allowing to be employed in their factories, children who come under any of the above mentioned provisions.

NEW WEIGH LOCK.

We are happy to announce the completion of the new weigh lock, at Mount Carbon. It is a first rate specimen of workmanship, and reflects great credit on the skilful mechanic under whose able superintendence the work has been constructed. In weighing a ton, the variation does not exceed a pound or a pound and a half, and half an ounce will turn the scale. This scale is built on a different principle from any of this state, the lock being subject to the rise and fall of water in the dam, and the scale is so constructed that it can be raised or lowered according to the height of the water. We have ascertained the dimensions of the scale, and amount of iron in the same, from Mr. Cole, which are as follows:

Length of the scale,	59 feet,
Width,	16 "
Weight of the cast iron,	19,943 lbs.,
do. of wrought iron and steel,	7,416 "

We have before alluded to the accuracy of the scale. It will weigh from 3 lbs. to 100 tons.—*Miner's Journal.*

UTICA AND SCHENECTADY RAIL ROAD.

Statement for the year 1837:

Total receipts for transporting passengers,		$315,361 61
Total expenditures on acc't of transportation,	$117,396 17	
Do. construction,	893,555 95	
		210,952 12
Balance		$104,409 49

The locomotive engines have run 150,000 miles, and the total number of passengers transported, 138,949.—*N. Y. Express.*

☞ Volume Six will be completed as speedily as possible. The next, or Volume for 1838, will be published in a more convenient form for preservation.

*** Subscribers who desire to be supplied with missing numbers, will do well to apply for them soon. We shall always take pleasure in furnishing them if we have them to spare.

☞ Particular attention will be given to the procuring of all kinds of Instruments required by Engineers.—Orders must be accompanied with the necessary funds or city acceptances.

AGENCY.

The Subscriber offers his services as Agent, to procure *Machinery for Mills, Steam Engines, Locomotives, Printing Machines, Presses, Types and Fixtures.*

He will give prompt attention to all orders entrusted to him for execution; and pledges himself to those who may employ him, that no effort on his part shall be wanting to procure the best articles to be had in the city—and to give satisfaction.

He will also employ Millwrights and Engineers to erect Mills, and put the Engines and Machinery in operation.

Orders accompanied with the necessary funds, or satisfactory city acceptances, should be addressed to D. K. MINOR, 30 Wall-st. N.Y.

LOUISVILLE, CINCINNATTI, AND CHARLESTON RAILROAD.

NOTICE TO CONTRACTORS.—Sealed Proposals will be received at the Office of the Company in Columbia, S. C., until the 15th day of February next, for the graduation and masonry of that portion of the Road from Columbia to the crossing of the Congaree River, in the vicinity of McCord's Ferry, being 25 miles in extent.

Also, for the construction of a Bridge of 400 feet in length, on the Congaree River, to be built on stone piers and abutments, for which there are suitable quarries in the neighborhood.

The plans and profiles of the line will be ready for inspection at the Office of the Resident Engineer, in Columbia, S. C., after the 10th day of February.

So soon as the surveys for location, now in progress, are completed, that part of the Road extending from McCord's Ferry to the Charleston and Hamburg Railroad, at Branchville, will be put under contract, of which due notice will be given.

WM. GIBBS Mc NEILL,
Chief Engineer.

☞ The Railroad Journal, N. Y. Courier & Enquirer, N. York; Providence Journal, Providence, R. I.: Atlas, Boston; Philadelpia Enquirer, Philadelphia; will publish the above notice 6 times, send a copy of the paper to the Office in Charleston, S. C., and a certified copy of their account for payment.

Jan. 12 fmw6

NEW ARRANGEMENT.

ROPES FOR INCLINED PLANES OF RAILROADS.

WE the subscribers have formed a co partnership under the style and firm of Folger & Coleman, for the manufacturing and selling of Ropes for inclined planes of railroads, and for other uses, offer to supply ropes for inclined planes, of any length required without splice, at short notice, the manufacturing of cordage, heretofore carried on by S. S. Durfee & Co., will be done by the new firm, the same superintendent and machinery are employed by the new firm that were employed by S. S. Durfee & Co. All orders will be properly attended to, and ropes will be shipped to any port in the United States.

12th month 12th, 1836. Hudson, Columbia County, State of New-York.

ROBT. C. FOLGER.
33—tf GEORGE COLEMAN.

AMES' CELEBRATED SHOVELS, SPADES, &c.

300 dozens Ames' superior back-strap shovels.
150 do. do. do. plain do.
150 do. do. do. cas steel Shovels & Spades
150 do. do. Gold-mining Shovels
00 do. do. plated Spades.
50 do. do. socket Shovels and Spades

Together with Pick Axes, Churn Drills, and Crow Bars (steel pointed), manufactured from Salisbury refined iron—for sale by the manufacturing agents,

WITHERELL, AMES & CO.
No. 2 Liberty street, New-York.
BACKUS, AMES & CO.
No. 8 State street, Albany.

N. B.—Also furnished to order, Shapes of every description, made from Salisbury refined Iron. v4-tf

MACHINE WORKS OF ROGERS, KETCHUM AND GROSVENOR, Paterson, New-Jersey.

The undersigned receive orders for the following articles, manufactured by them, of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

RAILROAD WORK.

Locomotive Steam-Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of cast iron, from a variety of patterns, and Chills; Car Wheels of cast iron, with wrought Tires; Axles of best American refined iron; Springs; Boxes and Bolts for Cars.

COTTON, WOOL, & FLAX MACHINERY,

Of all descriptions and of the most improved patterns, Style, and Workmanship.

Mill Gearing and Millwright work generally; Hydraulic and other Presses; Press Screws; Calenders; Lathes and Tools of all kinds; Iron and Brass Castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Paterson, N. J. or 60 Wall-st. New-York
51tf

FRAME BRIDGES.

THE undersigned, General Agent of Col. S. H. LONG, to build Bridges, or vend the right to others to build on his Patent Plan, would respectfully inform Railroad and Bridge Corporations, that he is prepared to make contracts to build, and furnish all materials for superstructures of the kind, in any part of the United States, (Maryland excepted.)

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington; two miles from the former place. Across the Motawamkeag river on the Military road in Maine. On the national road in Illinois, at sundry paints. On the Baltimore and Susquehanna Railroad at three points. On the Hudson and Paterson Railroad in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contoocook river at Hennikar, N. H. Across the Souhegan river, at Milford, N. H. Across the Connecticut river, at Hancock, N. H. Across the Androscoggin river, at Turner Centre, Maine. Across the Kennebec river, at Waterville, Maine. Across the Genesee river, at Squakiehill, Mount Morris, N. Y. Across the White River, at Hartford, Vt. Across the Connecticut River at Lebanon, N. H. Across the mouth of the Broken Straw Creek, Penn. Across the mouth of the Cataraugus Creek, N. Y. A Railroad Bridge diagonally across the Erie Canal, in the City of Rochester, N. Y. A Railroad Bridge at Upper Still Water, Orono, Maine. This Bridge is 500 feet in length; one of the spans is over 200 feet. It is probably the *firmest wooden bridge* ever built in America.

Notwithstanding his preseet engagements to build between twenty and thirty Railroad Bridges, and several common bridges, several of which are now in progress of construction, the subscriber will promptly attend to business of the kind to much greater extent and on liberal terms.

MOSES LONG,
Rochester, Jan. 19th, 1837. 4—y

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,

No. 264 Elizabeth street, near Bleecker street,
NEW-YORK.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on the New-York and Harlaem Railroad, now in operation.

ROACH & WARNER,

Manufacturers of OPTICAL, MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS, 293 Broadway, New-York, will keep constantly on hand a large and general assortment of Instruments in their line.

Wholesale Dealers and Country Merchants supplied with SURVEYING COMPASSES, BAROMETERS, THERMOMETERS, &c. &c. of their own manufacture, warranted accurate, and at lower prices than can be had at any other establishment.

☞ Istruments made to order and repaired.
1y—14

RAILWAY IRON, LOCOMOTIVES, &c. &c.

THE subscribers offer the following articles for sale:—

Railway Iron, flat bars, with countersunk holes and mitred joints,							lbs
350 tons 2by ½, 15 ft in length, weighing	4	0	0	per			
280 " 2 " ¾, " "	"	"	3	0	0	"	
70 " 1½ " ½, " "	"	"	2	½		"	
80 " 1¼ " ½, " "	"	"	1	0	0	"	
90 " 1 " ½, " "	"	"	½			"	

with Spikes and Splicing Plates adapted thereto. To be sold free of duty to State governments, or incorporated companies.

Orders for Pennsylvania Boiler Iron executed.

Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz. 30, 33, 36, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 2½, 2⅝, 3, 3⅛, 3¼, 3⅜, and 3½ inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand Wax.

Also, Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines.

Patent Felt for placing between the iron chair and stone block of Edge Railways.

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, be the agency of one of our partners, who resides in England for this purpose.

A highly respectable American Engineer resides in England for the purpose of inspecting all Locomotives, Machinery, Railway Iron, &c. ordered through us.

A. & G. RALSTEN & CO.,
28 tf Philadelphia, No. 4 South Front-st.

ARCHIMEDES WORKS.

(100 North Moore-street, N.Y.)

THE undersigned beg leave to inform the proprietors of Rail Roads, that they are prepared to furnish all kinds of Machinery for Rail Roads, Locomotive Engines of any size, Car Wheels, such as are now in successful operation on the Camden and Amboy Rail Road, none of which have failed.—Castings of all kinds, Wheels, Axles and Boxes, furnished at the shortest notice.

H. R. DUNHAM & CO.
NEW YORK, February 12th, 1836. 4—ytf

PATENT RAILROAD, SHIP AND BOAT SPIKES.

⁂ The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent) are found superior to any yet ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above-named factory—for which purpose they are found invaluable, as their adhesion is more than double any common Spikes made by the hammer.

⁂ All orders directed to the Agent, Troy, N.Y. will be punctually attended to.

HENRY BURDEN, Agent.
Troy, N.Y., July, 1831.

⁂ Spikes are kept for sale, at factory prices, by I & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water-street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

1J23am H. BURDEN.

G. Mitchell, Printer, 265 Bowery, N.Y.